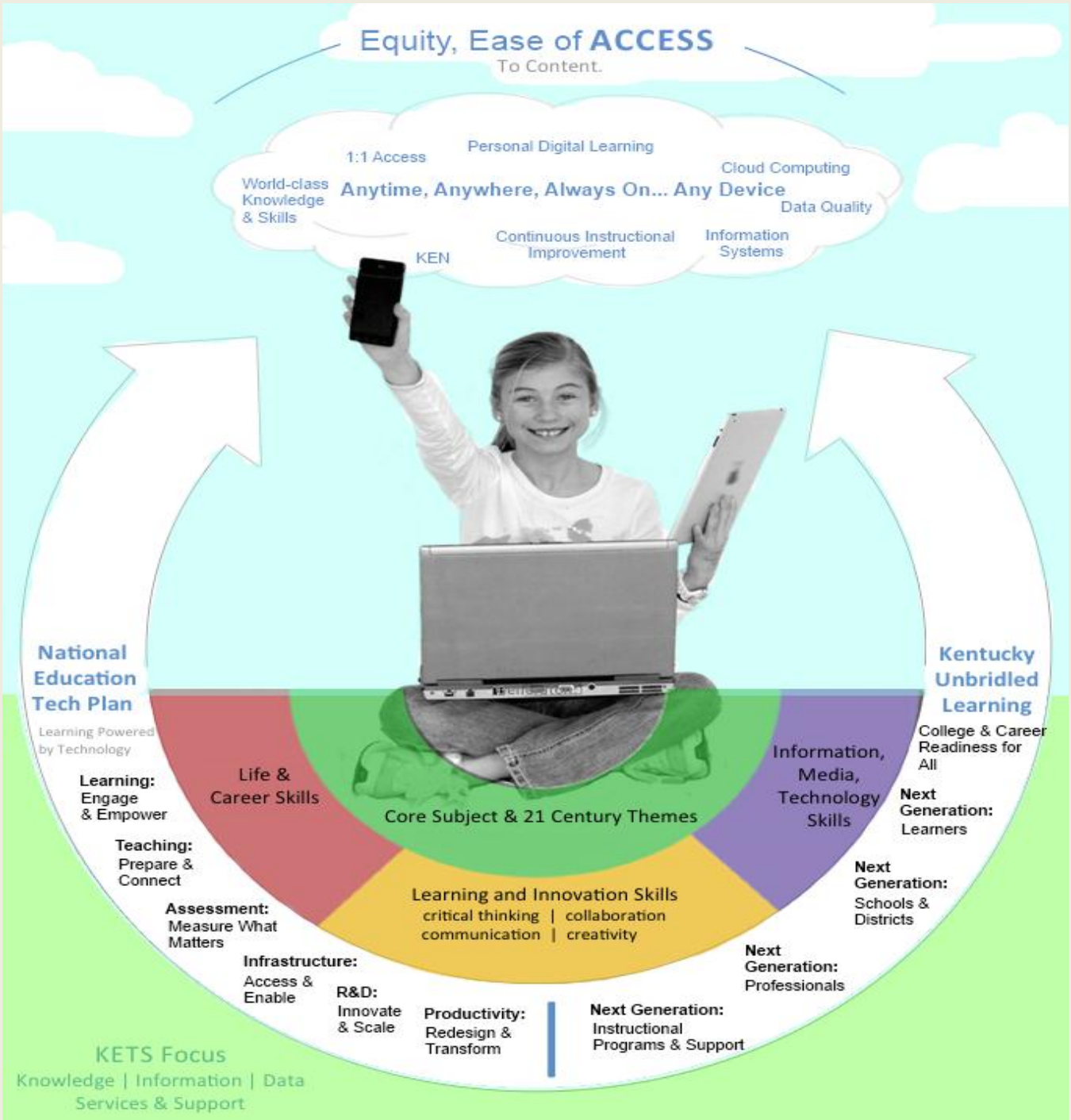
Student Access to Technology in Kentucky

David Couch,

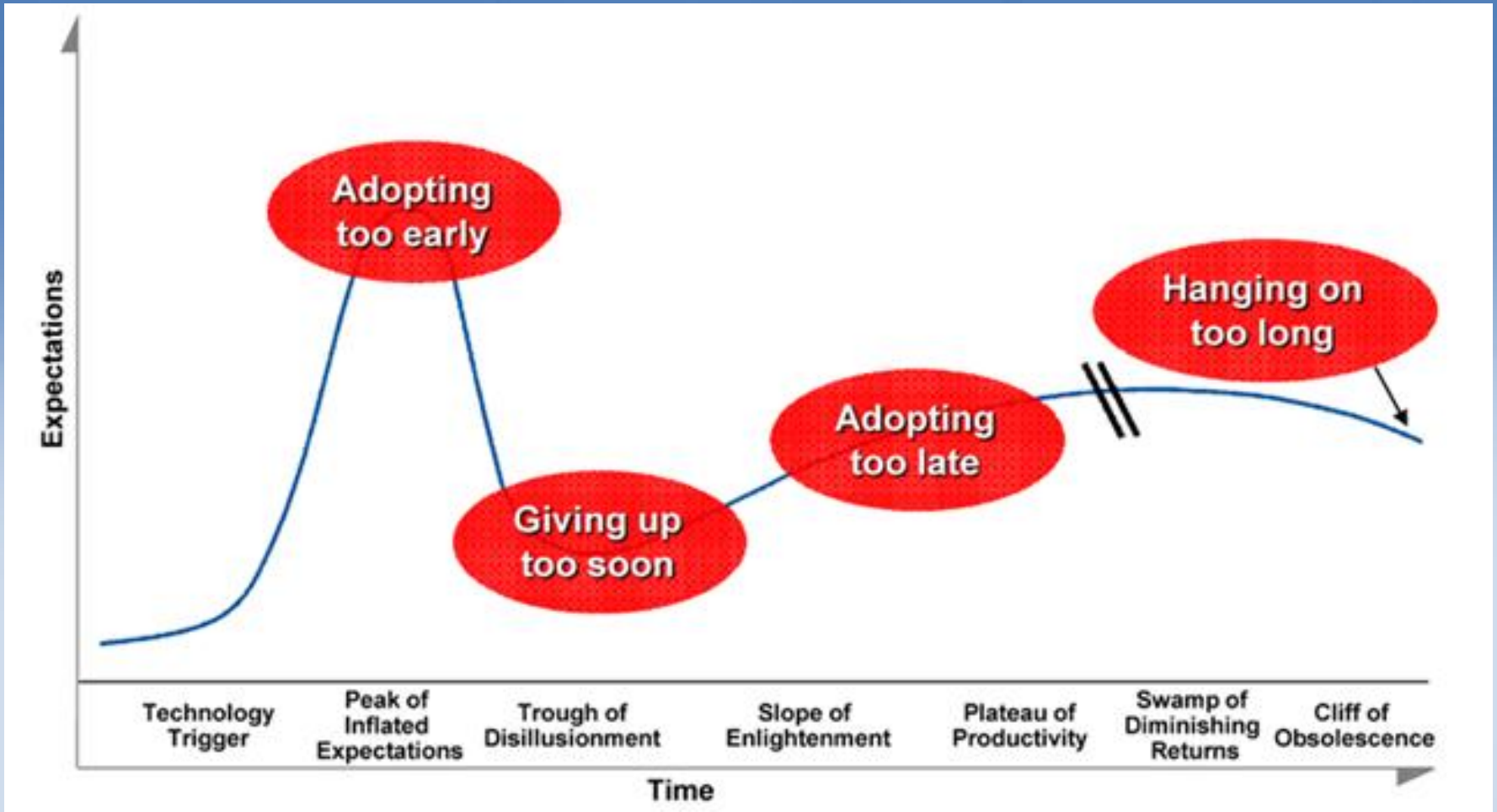
Kentucky Department of Education


Equity, Ease of ACCESS
To Content.
1:1 Access
Personal Digital Learning
Cloud Computing
World-class Knowledge & Skills
Anytime, Anywhere, Always On... Any Device
Data Quality
KEN
Continuous Instructional Improvement
Information Systems
National Education Tech Plan
Learning Powered by Technology
Kentucky Unbridled Learning
College & Career Readiness for All
Learning: Engage & Empower
Life & Career Skills
Core Subject & 21 Century Themes
Information, Media, Technology Skills
Next Generation: Learners
Teaching: Prepare & Connect
Learning and Innovation Skills
critical thinking | collaboration
communication | creativity
Next Generation: Schools & Districts
Assessment: Measure What Matters
Infrastructure: Access & Enable
R&D: Innovate & Scale
Productivity: Redesign & Transform
Next Generation: Professionals
Next Generation: Instructional Programs & Support
KETS Focus
Knowledge | Information | Data
Services & Support

Big Changes for K-12

- Cloud Computing for 174 school districts
- Mobile explosion- dense wireless
- Blended learning
- e-books
- Portals- data driven decisions/accountability
- Parent and student engagement
- Digital Citizenship

Technology Hype Cycle for Supts



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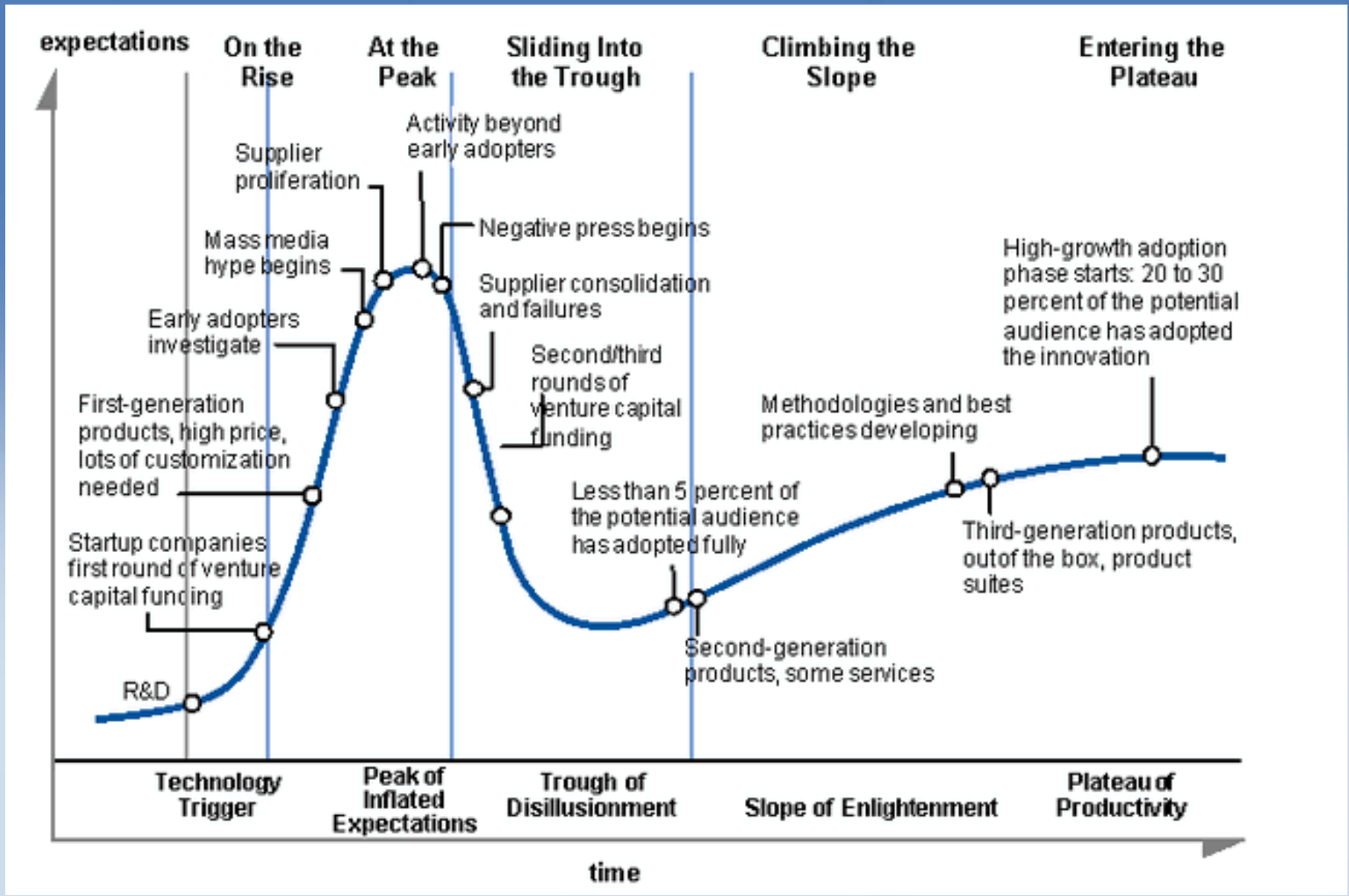
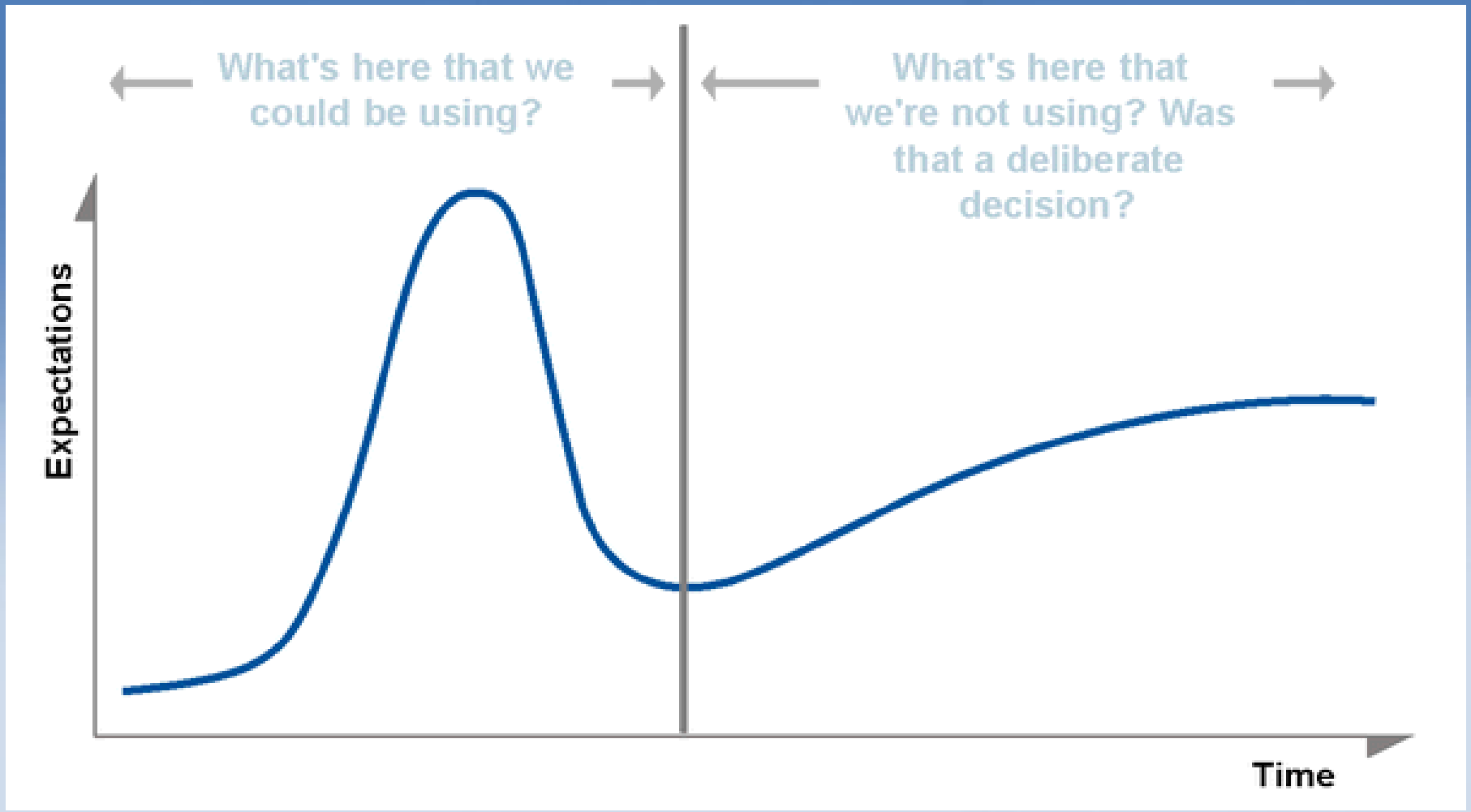

expectations
On the Rise
At the Peak
Sliding Into the Trough
Climbing the Slope
Entering the Plateau
Activity beyond early adopters
Supplier proliferation
Negative press begins
Mass media hype begins
Supplier consolidation and failures
Early adopters investigate
Second/third rounds of venture capital funding
High-growth adoption phase starts: 20 to 30 percent of the potential audience has adopted the innovation
First-generation products, high price, lots of customization needed
Methodologies and best practices developing
Less than 5 percent of the potential audience has adopted fully
Startup companies first round of venture capital funding
Third-generation products, out of the box, product suites
Second-generation products, some services
R&D
Technology Trigger
Peak of Inflated Expectations
Trough of Disillusionment
Slope of Enlightenment
Plateau of Productivity
time

Organizational Adoption Cycle



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Can you? Should You? How Much? Who Pays?

- Ideally you ask the question “Should it be done?” before asking “Can it be done?” but it usually doesn’t work out that way.
- Everything is technically possible. So if you ask a technician “can it be done?”, you will usually get a “yes “answer because they usually have “can do” types of attitudes...which is good.
- However just because it is technically possible doesn’t mean it should be done. Someone in a leadership/policy position needs to answer the question “should it be done?” before proceeding even though it “can be done”.
- If it can be done and should be done, then it needs be clarified “How much will it cost?” and “who pays?”. The “How much will it cost?” needs to include the total cost of ownership which includes not just the initial costs but the costs over at least 5 year span to sustain. If there is not money to sustain then it should not be initially built or purchased.

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The Nine Elements of Digital Citizenship in Schools

While immersed in a technology society it is important that students develop and retain the good people skills that are important for every citizen to have. Districts that take the time to address these nine elements with their students and staff will avoid problems while they are at school as well as improving activities at home that might have an impact at school. KDE emphasizes and annually tracks each district's progress in each of the nine elements, among many others. Federal technology funding has very recently become interested in these same types of things being addressed.

- Digital Access: full electronic participation in society.
- Digital Commerce: electronic buying and selling of goods.
- Digital Communication: electronic exchange of information.
- Digital Literacy: process of teaching and learning about technology and the use of technology.
- Digital Etiquette: electronic standards of conduct or procedure.
- Digital Law: electronic responsibility for actions and deeds.
- Digital Rights & Responsibilities: those freedoms extended to everyone in a digital world.
- Digital Health & Wellness: physical and psychological well-being in a digital technology world.
- Digital Security (self-protection): electronic precautions to guarantee safety.

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Digital Learning 2020

- **All students should be eligible for digital learning**. Eligibility for full and part time learning options is key to a number of recommendations including advanced courses, world languages, and special needs, credit recovery, and dual credit
- Authorize multiple statewide online learning providers to expand full and part time options. Like recommendation #1, a multiple providers environment fulfills the vision
- **Allow students to personalize their learning**
- Support customized learning pilots
- Support competency-based learning pilots
- Plan for shift to online instructional materials by 2013-14
- Support the shift to blended instruction Assessment and Accountability (DLN 8, BNG 8)
- Plan for **online assessment** by 2013-14
- **Create a statewide online/blended learning** authorizer/contractor

Develop a fractional and performance-based funding model

Create a program management office and fund the transition

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The Basic 5 Senses

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The Other Sense Test

- Educational Sense
- Fiscal Sense
- Technical Sense
- Support Sense
- Common Sense
- PR Sense

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High Use and Sustainment

- Technology can be educational multiplier if they already have a solid educational practice. It can also send them in the wrong direction faster.
- There are some basic things that up the odds of sustainment and reduce the hassle factor for teachers.
- Technology can create a more engaging experience for students

Both Equity and Ease of Access

- Anytime, anywhere, always on
- No special rooms (web conferencing)
- Home and school
- Mobile end devices
- Personal and professional world meshing

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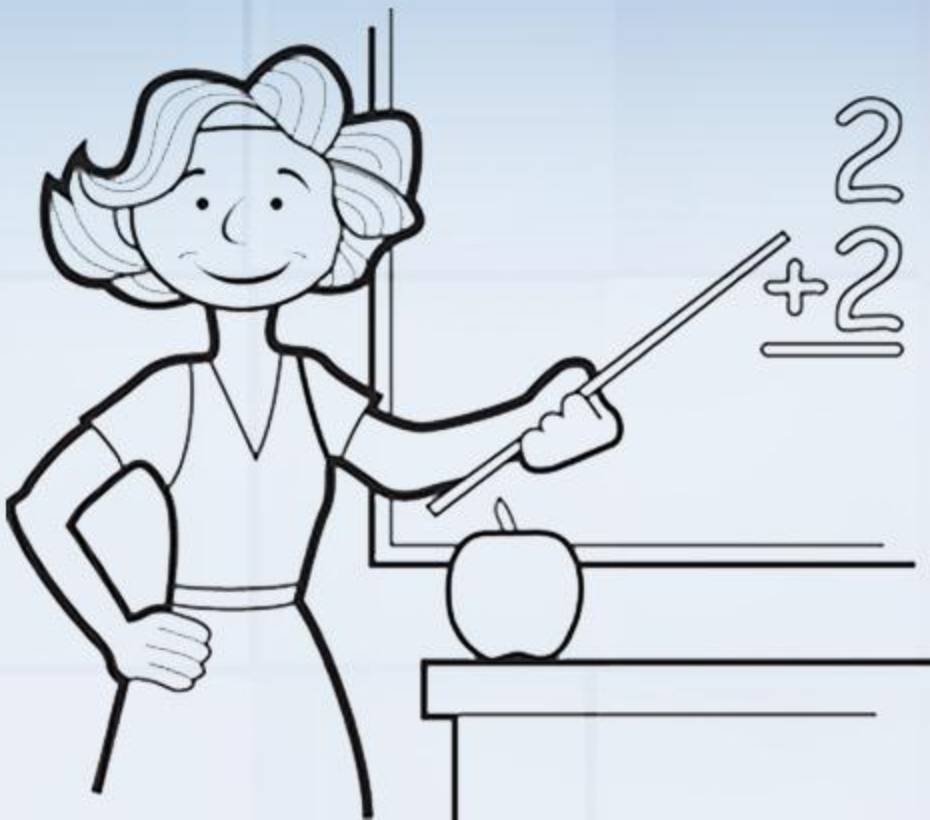
Extremely Teacher Friendly

- Intuitive to quickly use without remembering a bunch of steps
- No computer science degree required
- No matter how initially flashy, they will quickly move away if it does not have ease of use



- Must have strong added value link to what they need to teach or do.
- Must be reliable.
- Low initial and ongoing costs to the end customer. If not they tend to migrate away from it after the initial flash.

Students of all ages that have access to mobile devices responded that they use them for the following educational purposes:

- 74% check grades (e.g. they can check their grades by mobile app in Infinite Campus since Oct 2011)
- 60% take notes
- 50% calendaring
- 44% communication- e-mail
- 40% school activities
- 70% Internet research
- 53% collaboration with peers
- 37% create and share content
- 35% record lectures

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National Education Technology Plan

Kentucky is in sync with the five recommendations within the National Education Technology Plan:

- Learning: Engage and Empower - All learners will have engaging and empowering learning experiences both in and out of school that prepare them to be active, creative, knowledgeable, and ethical participants in our globally networked society.
- Assessment: Measure What Matters – Our education system at all levels will leverage the power of technology to measure what matters and use assessment data for continuous improvement.
- Teaching: Prepare And Connect - Professional educators will be supported individually and in teams by technology that connects them to data, content, resources, expertise, and learning experiences that enable and inspire more effective teaching for all learners.
- Infrastructure: Access and Enable - All students and educators will have access to a comprehensive infrastructure for learning when and where they need it.
- Productivity: Redesign and Transform - Our education system at all levels will redesign processes and structures to take advantage of the power of technology to improve learning outcomes while making more efficient use of time, money, and staff.

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6th Graders

- 6th Graders are much more tech savvy and more likely to use emerging tech tools than their older siblings in high school.
- 25% use e-textbooks, 50% have a cell phone and a third of those are Smartphones with data plans.
- 50% of the 6th grade girls and a third of the 6th grade boys have Facebook accounts. That is a 125% increase in 2 years.
- 22% are in virtual worlds (e.g., Second Life) and 50% play educational games.

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Electronic Content Delivery Devices

- Close to 70% of the parents believe on-line text books are a good investment. That number was just 21% in 2008. In Hancock County they plan to move totally away from paper text books as soon as possible. Previously Hancock County paid $144 for a single new math book per student. For that same $144 they will get electronic text for not just one student but that $144 covers the cost for an electronic textbook for all students for that year. The electronic textbook will automatically get updates placed in it and overall it costs half of what they would have had to pay with a normal 6 year commitment to a paper book.

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Blended Learning

- 30% of students have experienced blended learning. Just two years earlier that was just 10%.
- A blended learning environment also yielded similar high results: 81% report increases in high-stakes test scores, 63% report reduction in disciplinary action and 59% report dropout rate reduction.

Student On-line Collaboration

- On-line collaboration with these mobile devices no longer limits students to face to face interaction.
- They use Skype, Facetime, social networking, e-mail, IM and chat to interact with their peers while working together on school projects.
- Online collaboration increases student engagement. 69% of schools reported a drop in disciplinary action and 62% reported a reduction in dropouts due to student's online collaboration with mobile devices.

Consolidation of devices

- In both Hancock and Woodford County the iPads allow consolidation of other devices that districts or parents had to previously acquire. For example, $120 no longer has to be paid by parents in Hancock and Woodford County for a graphing calculator for each high school student since there is a 99 cent iPad app that does the same thing, the school no longer has to pay for student response systems (aka Clickers) that are used in their classrooms for formative assessments since the tablet can do that as well and 1-1 significantly reduces (by at least 50%) the printing and copier costs/needs of organizations.

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Chart 6.6. What was the original impetus for your technology initiative? (Q10)

Impetus for Technology Initiative: Top 4 Reasons

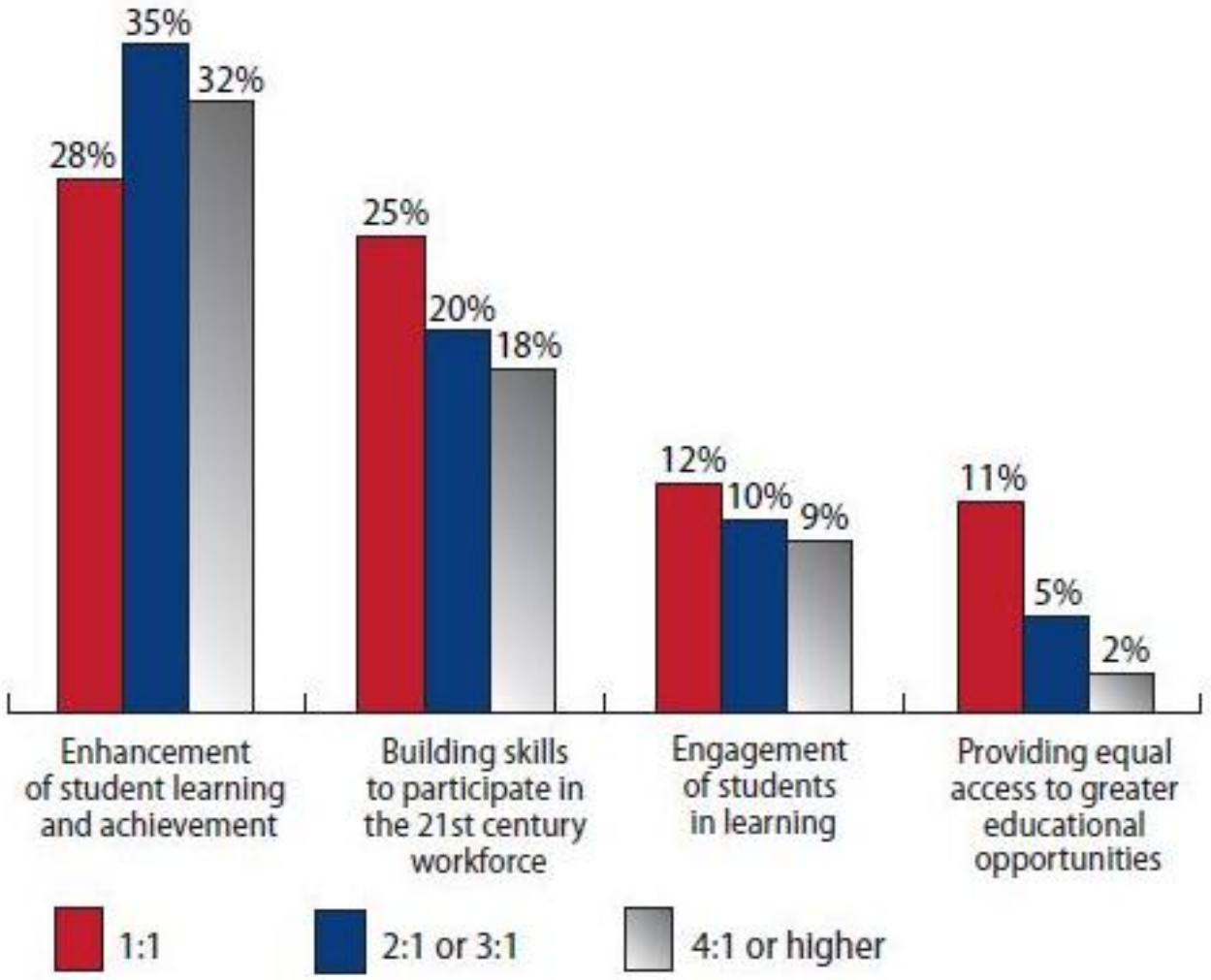

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Chart 7.3. How has ubiquitous technology changed the following? (Q26)

Improvements Due to Technology Deployment:
All Schools by Student-Computer Ratio

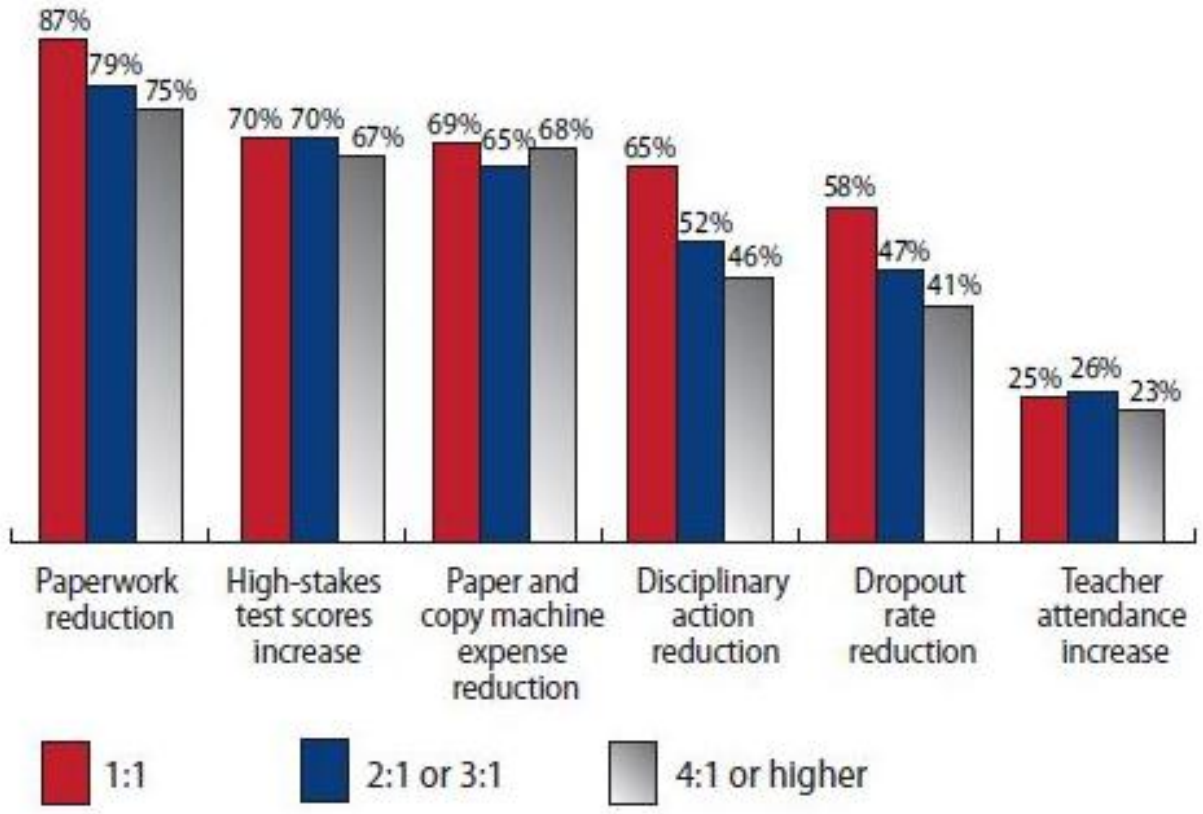

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Chart 6.4. How frequently do your students use technology as an integral part of instruction? (Q9)

Technology Integration by Subject Area: Top 5

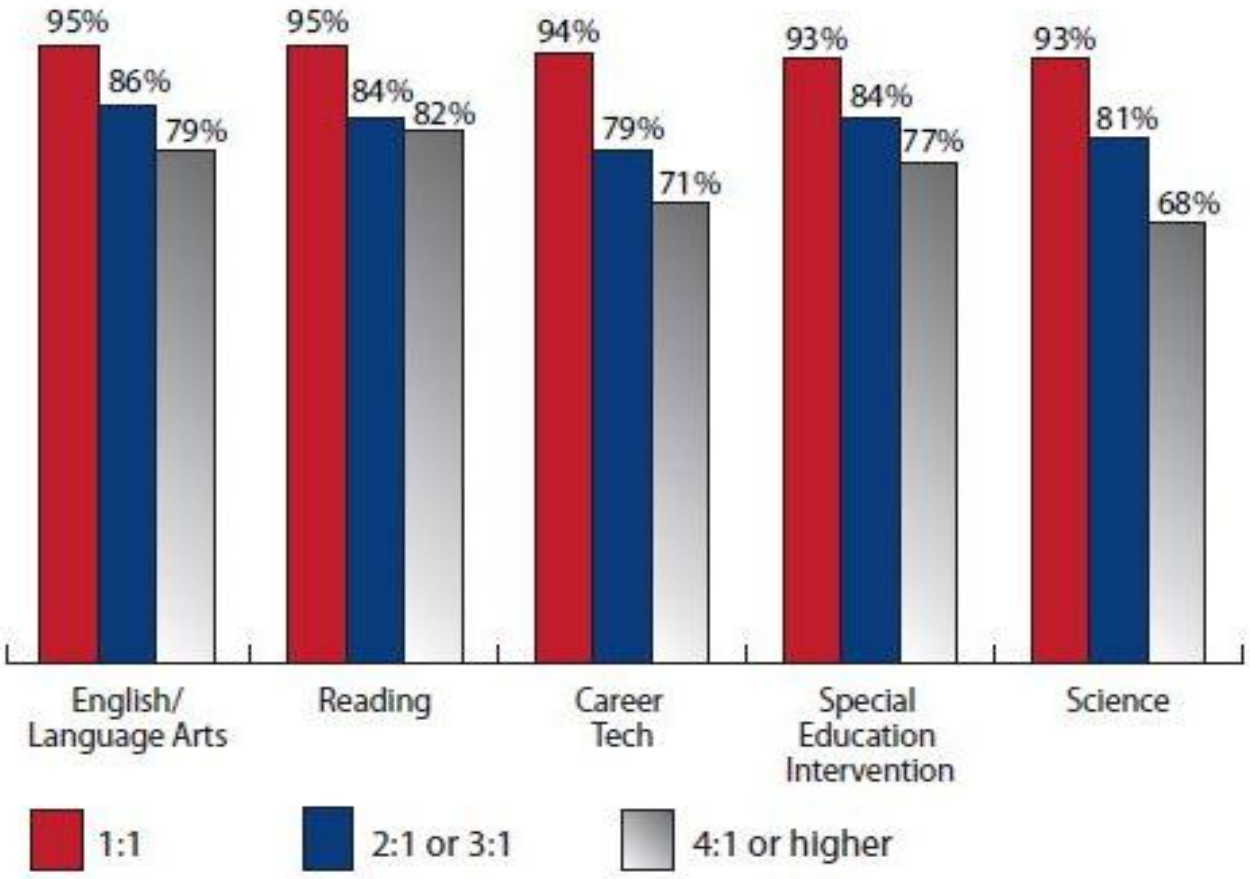

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Chart 7.4. How has ubiquitous technology changed the following? (Q26)

Improvements Due to Technology Deployment:
High Schools by Student-Computer Ratio

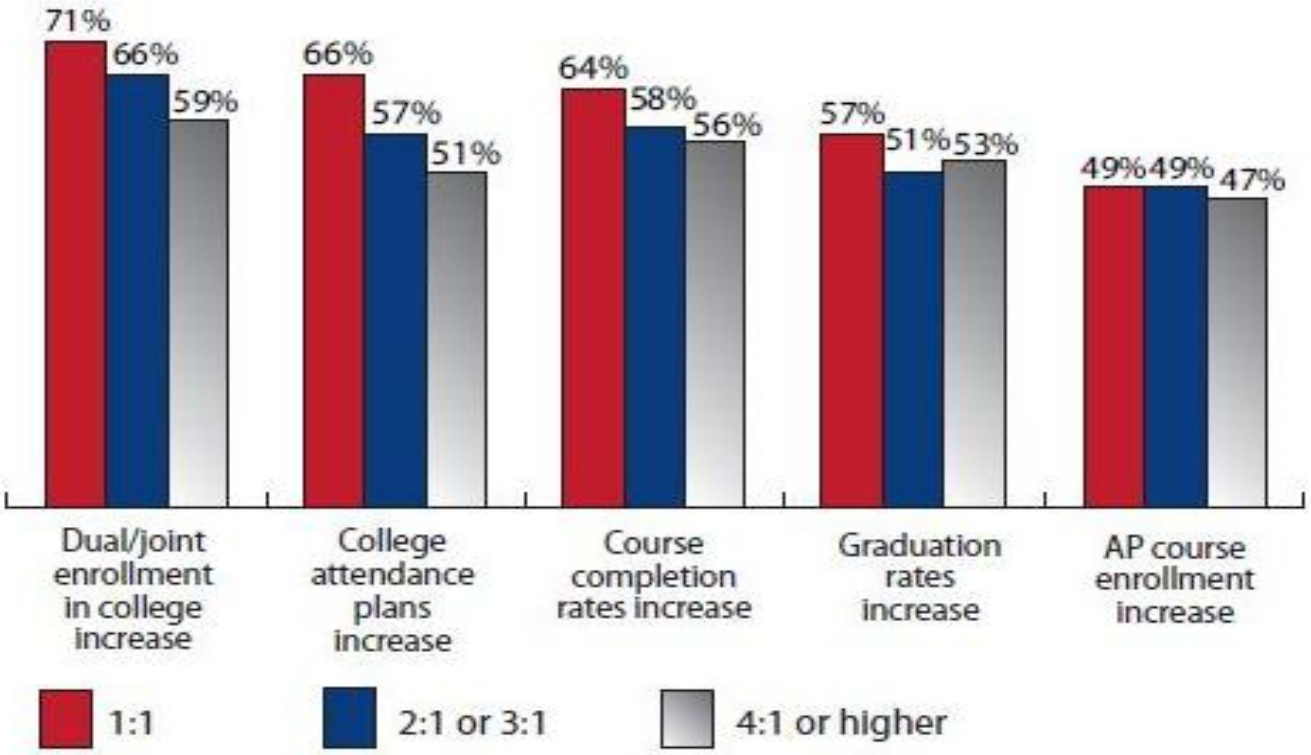

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Chart 8.1. How do teachers and students in your school use technology in instruction? (Q16)

Learning Activities: Students and Teachers

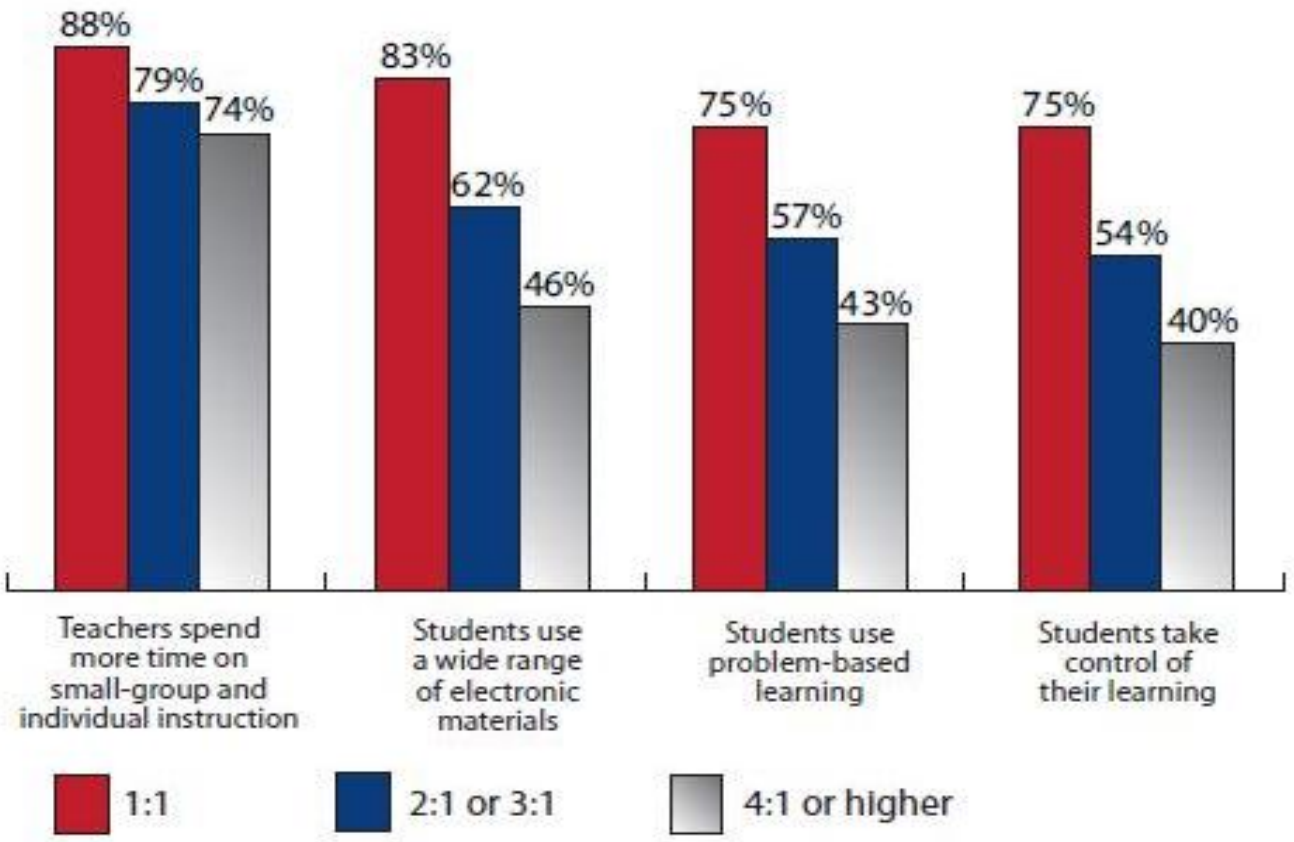

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Chart 8.2. How frequently do students actually use technology in the following activities? (Q18)

Technology Tools Used: Actual Use Estimated – Top Five

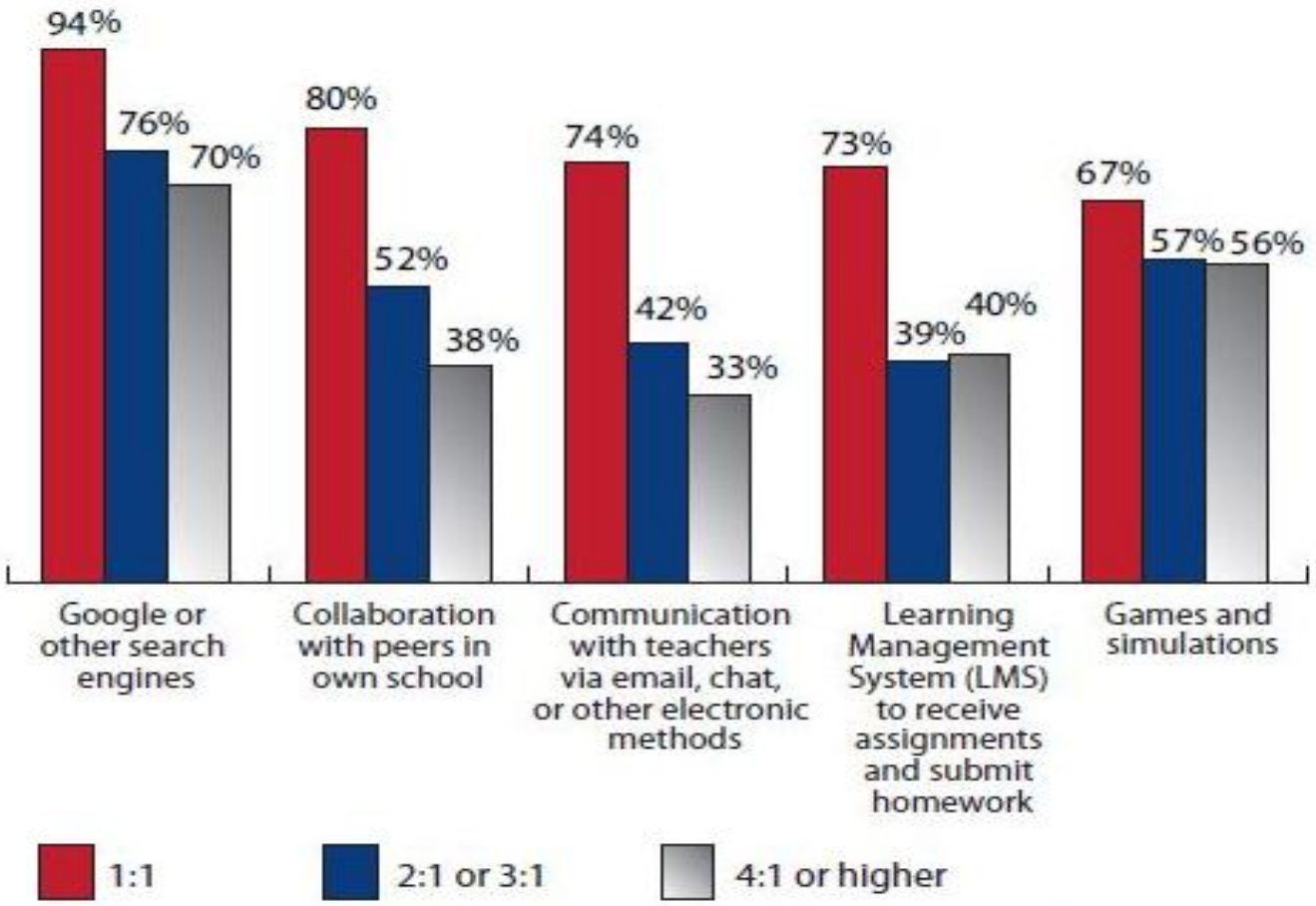

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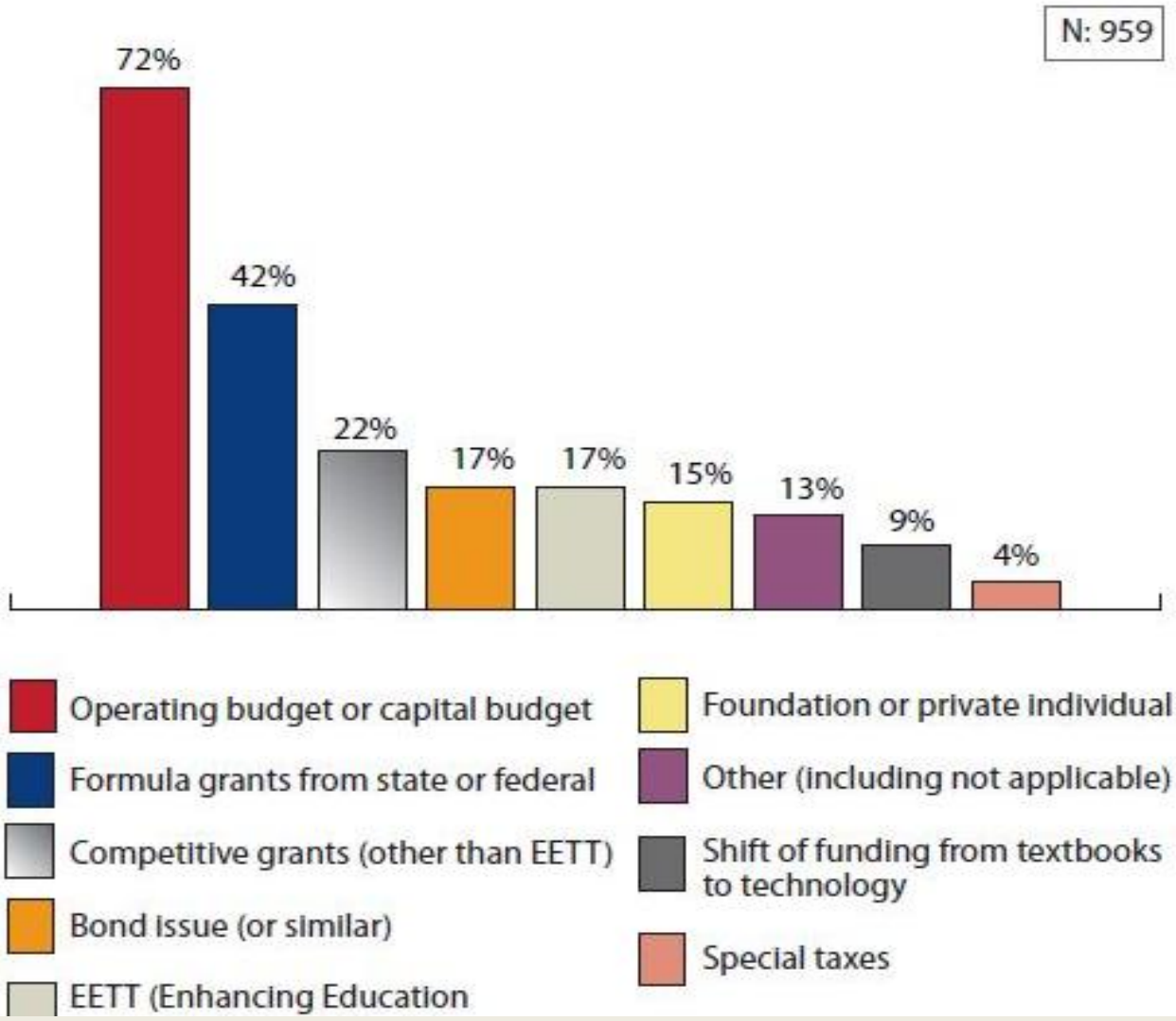
Chart 6.7. How was your technology initiative funded? Check all that apply. (Q11)

Funding Sources for Technology Initiative



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Major Mobile Initiatives in KY K-12

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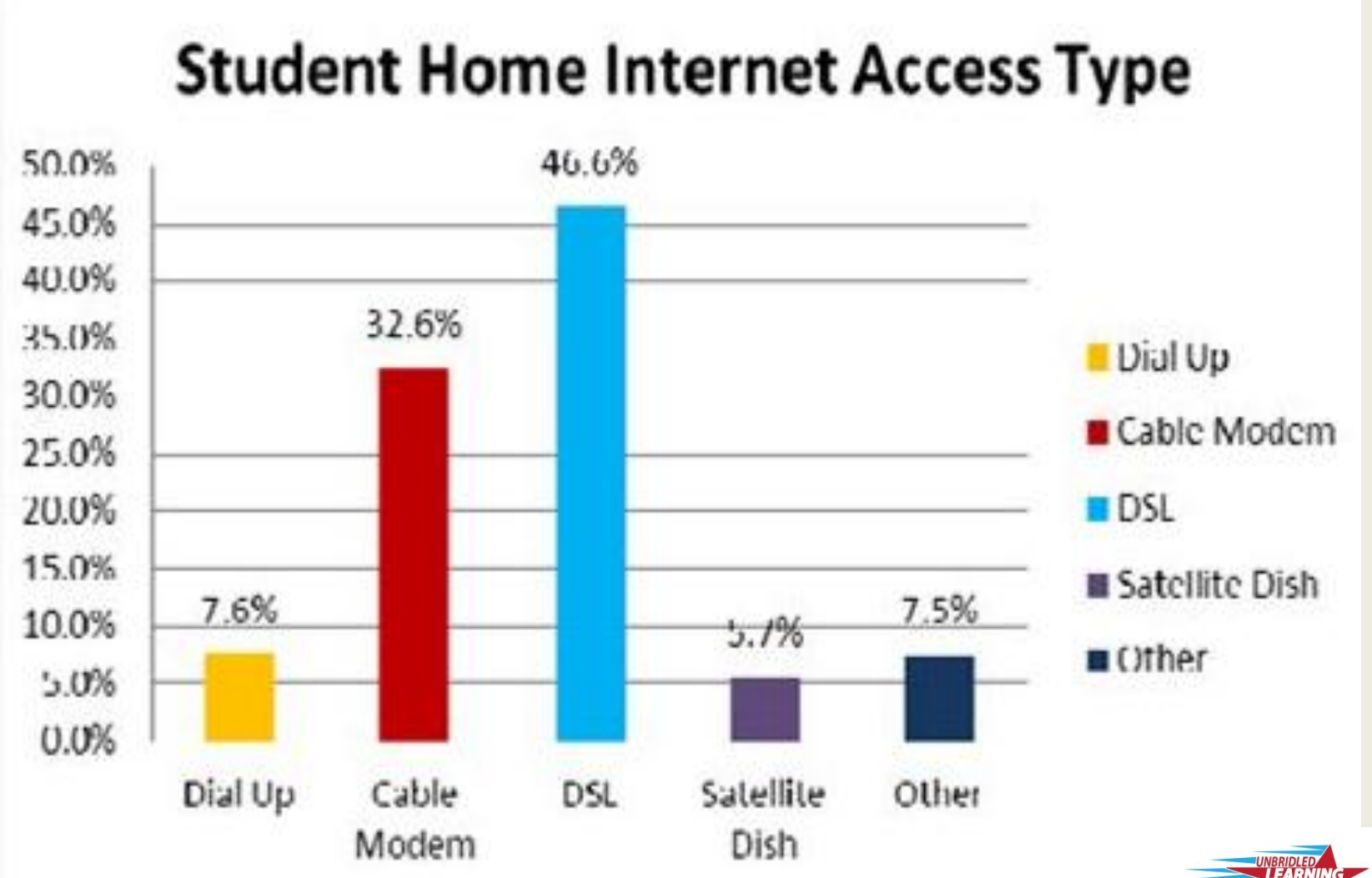
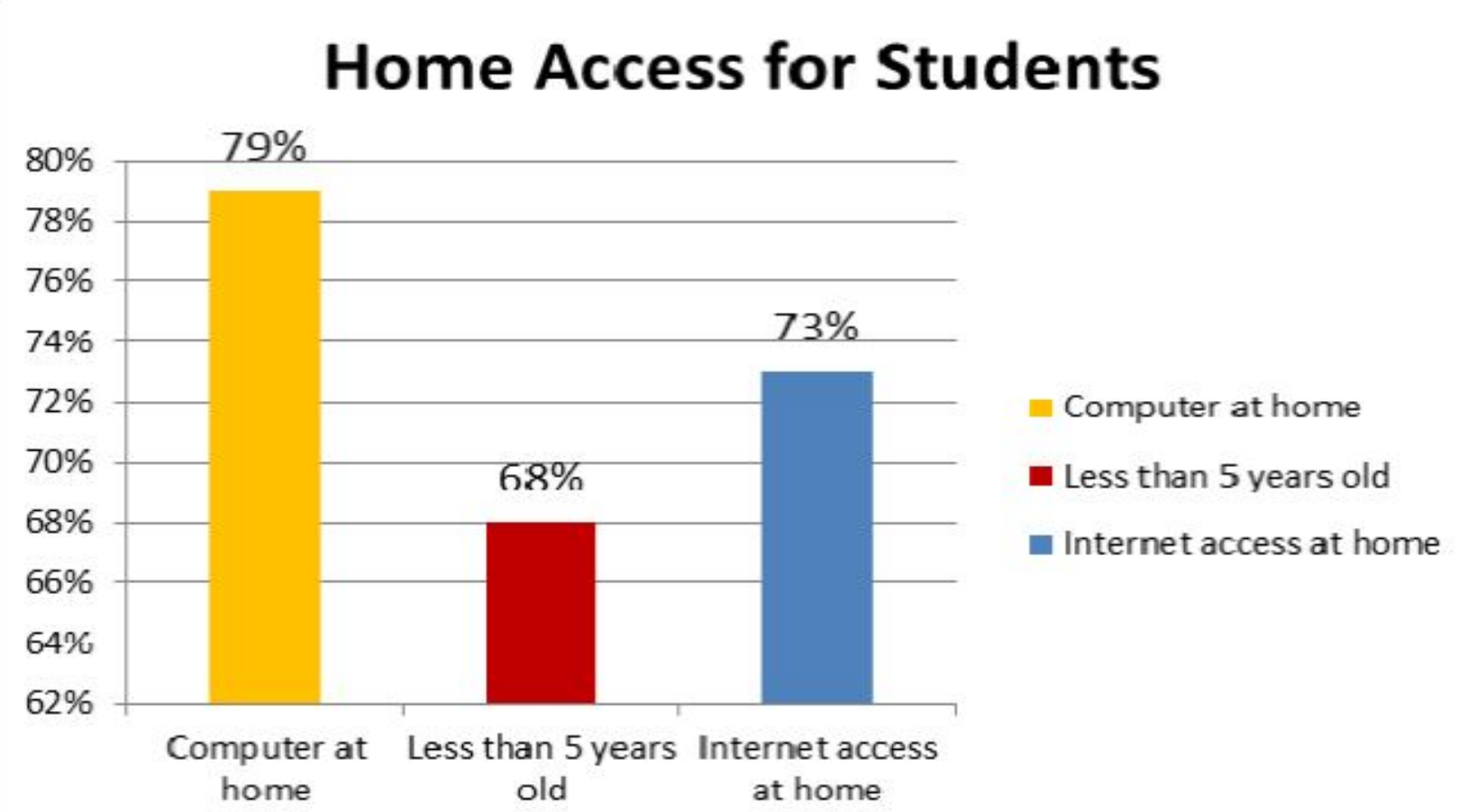
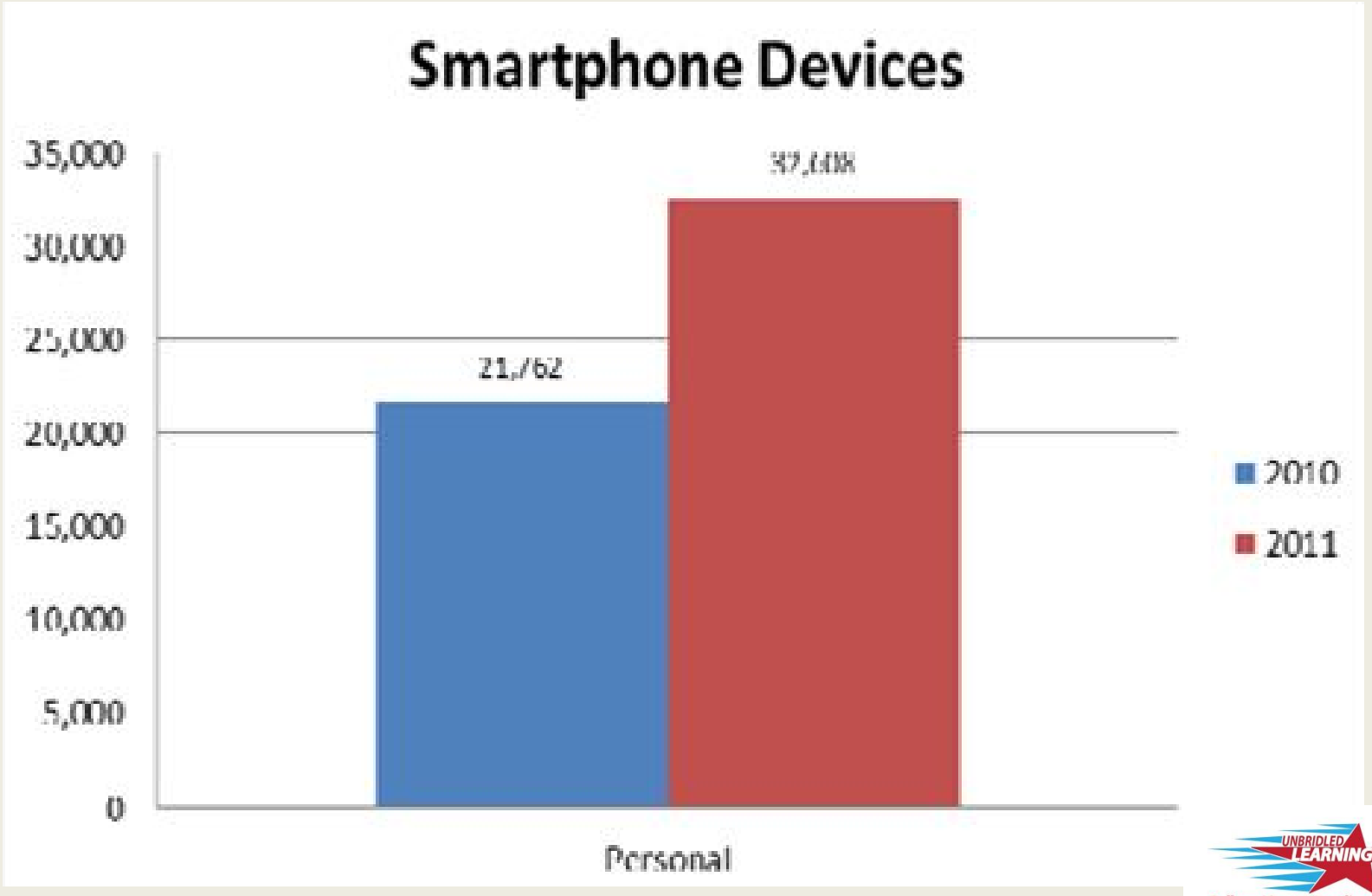
KY K-12


Student Home Internet Access Type
50.0%
45.0%
40.0%
35.0%
30.0%
25.0%
20.0%
15.0%
10.0%
5.0%
0.0%
7.6%
32.6%
46.6%
5.7%
7.5%
Dial Up
Cable Modem
DSL
Satellite Dish
Other
Dial Up
Cable Modem
DSL
Satellite Dish
Other

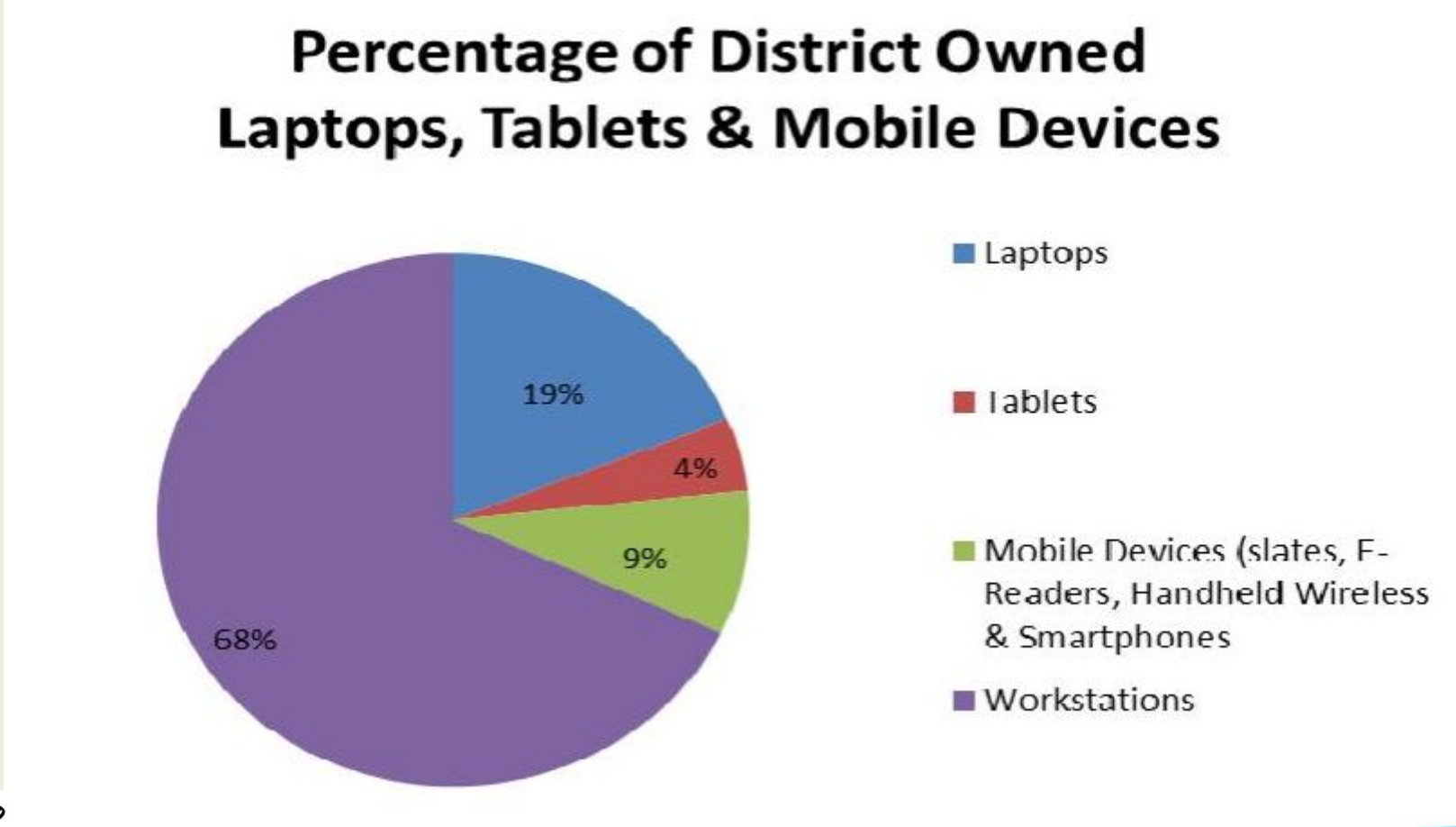
KY K-12


Home Access for Students
80%
78%
76%
74%
72%
70%
68%
66%
64%
62%
79%
68%
73%
Computer at home
Less than 5 years old
Internet access at home
Computer at home
Less than 5 years old
Internet access at home

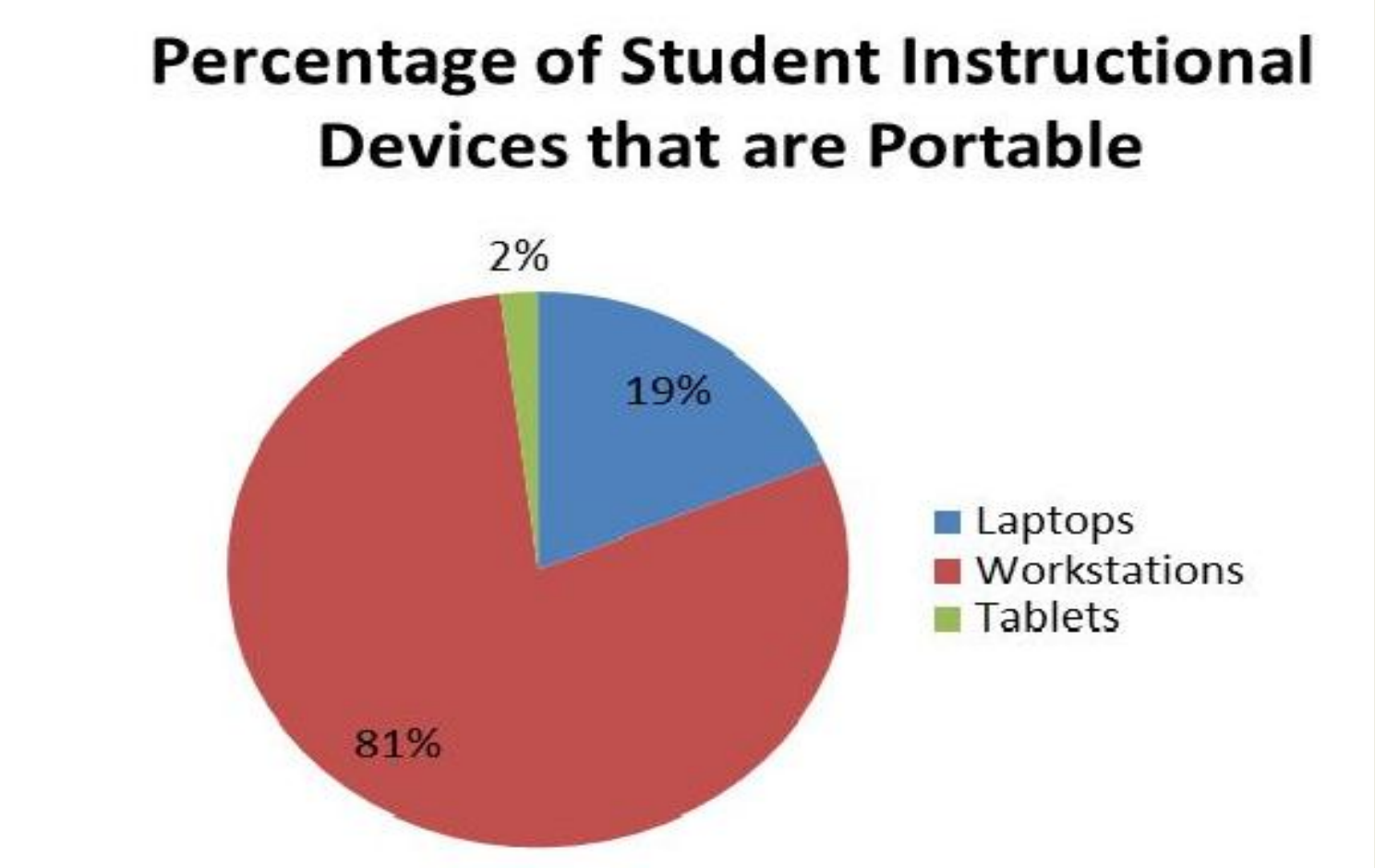
KY K-12


Smartphone Devices
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
21,762
2010
2011
Personal

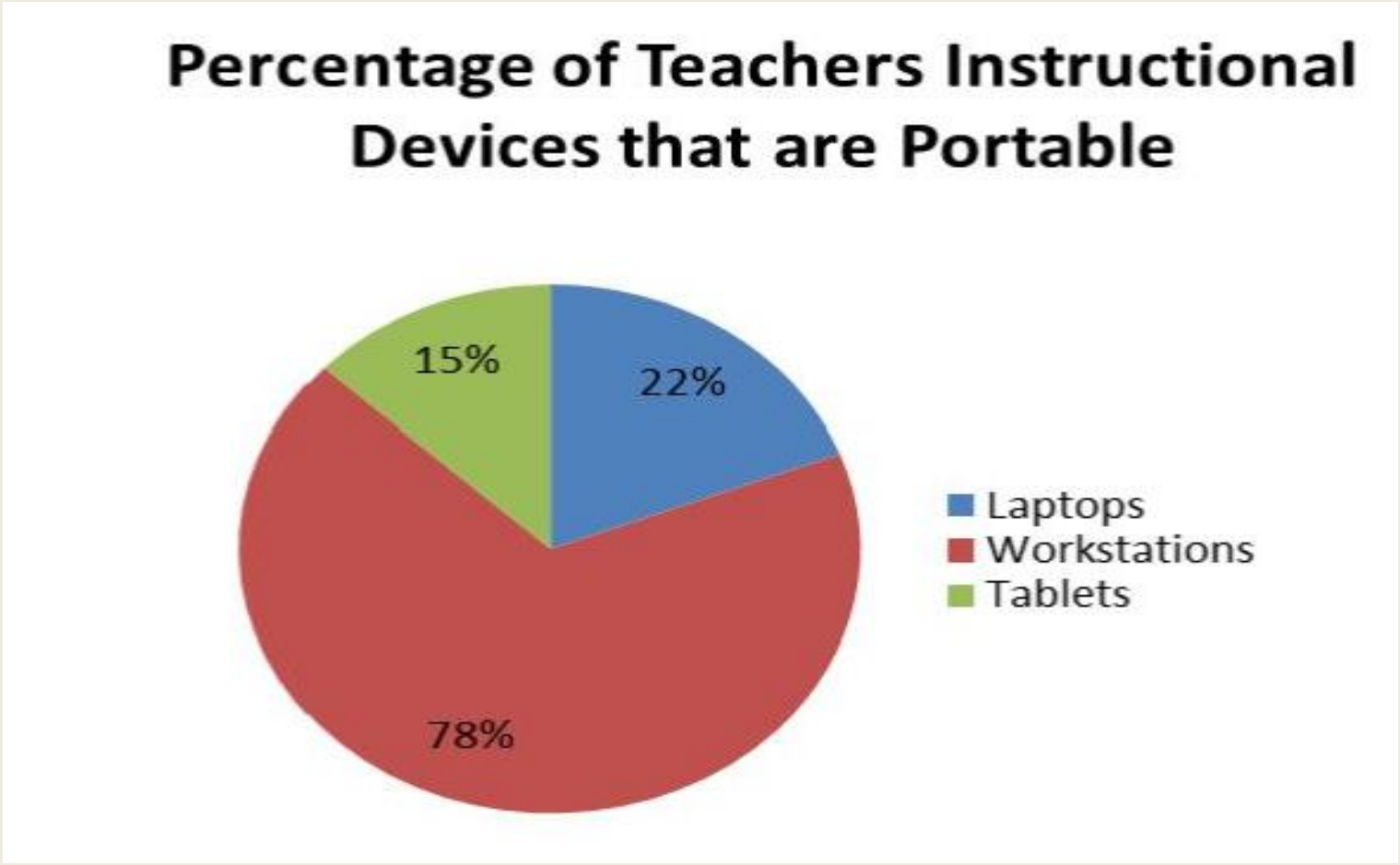
KY K-12


Percentage of District Owned Laptops, Tablets & Mobile Devices
19%
4%
9%
68%
Laptops
Tablets
Mobile Devices (slates, E-Readers, Handheld Wireless & Smartphones
Workstations

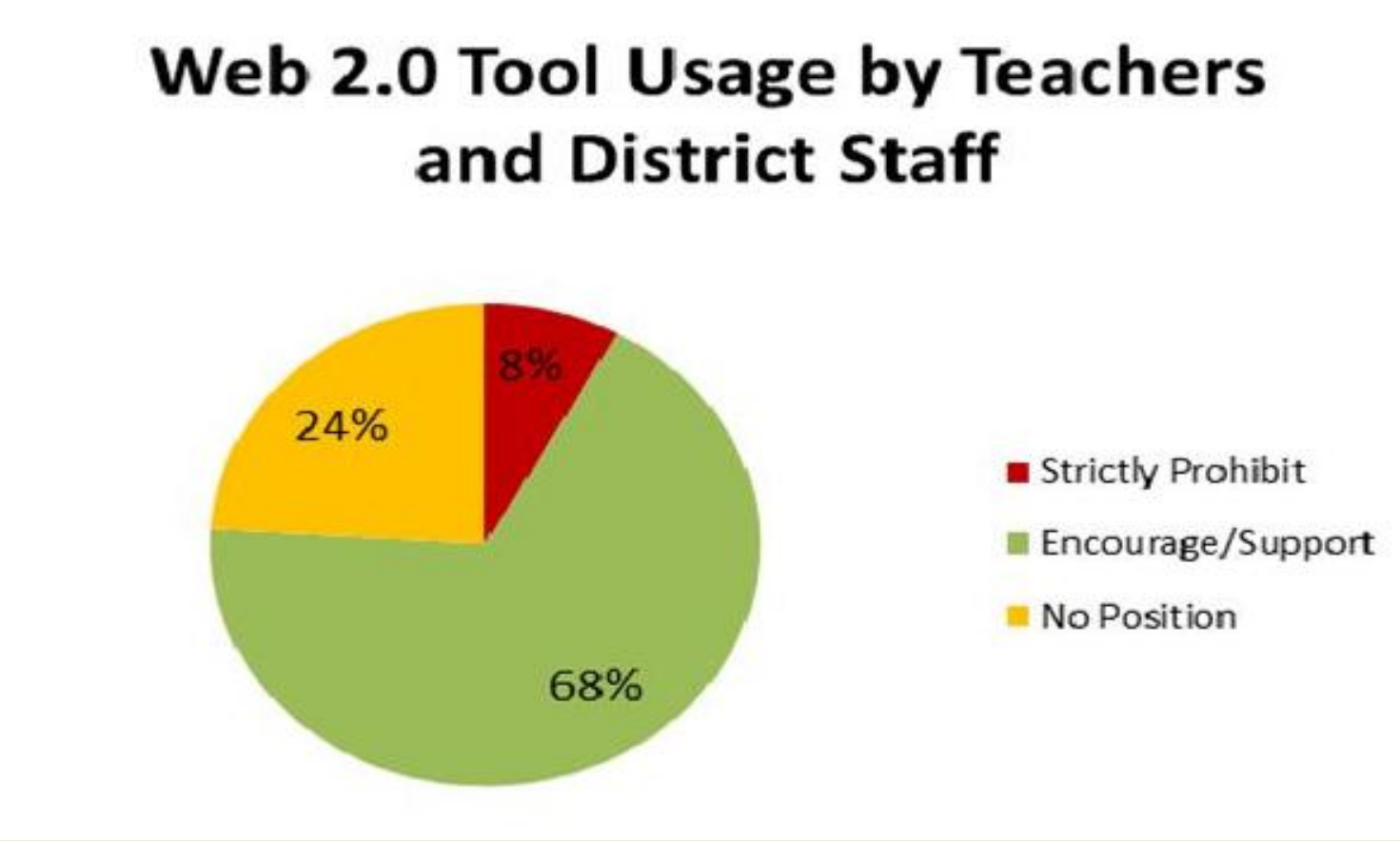
KY K-12


Percentage of Student Instructional Devices that are Portable
2%
19%
81%
Laptops
Workstations
Tablets

KY K-12


Percentage of Teachers Instructional Devices that are Portable
15%
22%
78%
Laptops
Workstations
Tablets

KY K-12


Web 2.0 Tool Usage by Teachers and District Staff
8%
24%
68%
Strictly Prohibit
Encourage/Support
No Position

Woodford County

Woodford County

Research

- 1:1 Initiatives
- School Visits
- Market Trends
- Textbook Companies
- Device Research
- Enterprise Management

Woodford County

The Changing Classroom Dynamic

Woodford County

- Internet Access
  - Immediate Research Opportunities
  - 24x7 learning opportunities
- Student Centered
- Increased Communication
- Immediate Formative Feedback
- Flipped Classroom
- Increased Collaboration
  - Google Docs & Prezi
  - Video Vignettes
- Increased Student Engagement
  - Forums

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Infrastructure

- Upgraded Wireless Network
- Prepped for Mobile Devices

Woodford County

Technology Preparation

- Infrastructure
- Capacity
- Student Device Preparation
- Mobile Device Management

casper SUITE

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Pilot Program

- 4 teachers
- >500 students
- Massive Success

Woodford County

Teacher Education

- Advance training for teachers
- Issued iPads 5 months in advance
- Professional Development
  - Online Classrooms (Moodle)
  - General Use of iPads
  - Digitizing and delivering digital documents.
- Developed iPad Instructional Team (Capacity Building)

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Policy Development

- Student Handbook
- Student/Parent Agreements
- iPad Protection Plan
- Discipline Policy
  - Identified behaviors covered under current policies.
  - Adopted a discipline philosophy geared for a digital learning environment.

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Woodford County Public Schools
iPad Accidental Protection Plan

The Woodford County Public School system is providing and administering an insurance program for students and parents as part of our Next Generation Learning Initiative. Enrollment in this program is required for students who wish to take their iPad home. Students who are not enrolled in the program will check their iPad in and out of the library media center each day. This plan covers "accidental damage" to the device and is designed to limit a family's financial responsibility for any damages as described in the coverage section below. In addition each device is covered under a manufacturer warranty that covers the normal operation of the device to ensure that it functions properly.

Program Fee/Coverage

- $35 non-refundable fee per school year.
- Limit of Liability: $600
- Coverage: Repair/Replacement of school issued iPad.

Effective Coverage/Expiration Dates

- **Effective Date:** Based on the receipt of signed agreement.
- **Expiration Date:** Last Day of School for the 2011-2012 School Year or date of un-enrollment.

Coverage

- **Accidental Damage:** Pays for accidental damage caused by liquid spills, drops, or any other unintentional event.
- **Theft:** Pays for loss or damage due to theft; the claim requires a police report to be filed.

Exclusions

- **Dishonest, Fraudulent, Intentional, Negligent or Criminal Acts:** Will not pay if damage or loss occurs in conjunction with a dishonest, fraudulent, intentional, negligent or criminal act. The student/parent will be responsible for the full

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Student Preparation

- Device Education
- Policy Development
- User Agreements/Insurance
- Student Help Desk Creation
- Digital Citizenship

iTutor

INTERNET DDL Digital Driver's License

Woodford County

Most Used Apps

moodle

Pick Me

Clear Record

iTunesU

Replay Note

nearpod

popplet

socrative

Woodford County

Next Steps

- Increase Student Collaboration
  - Product Creation
- Flipped Classroom Training
- Teacher Generated Materials
  - iBook Author
  - Replay Note
- Content Specific Teacher Training
- Tweak iPad Specific Discipline Policies

Woodford County

Final Thoughts

- The iPad amplified teachers strengths and weaknesses.
- The iPad is a student tool!
- Teachers who tried to integrate the iPad into what they have always done experienced median success as compared to teachers who restructured their classroom.
- Students help drive innovation!